



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.



KEPLER.

P U B L I C A T I O N S
O F T H E
Astronomical Society of the Pacific.

VOL. VIII. SAN FRANCISCO, CALIFORNIA, DECEMBER 1, 1896. NO. 53.

KEPLER.

BY EDWARD S. HOLDEN.

JOHN KEPLER was born, December 27, 1571, at Magstatt, in Wurtemberg. He was a feeble child, with weak vision. His family, though very poor, had pretensions to nobility, as one of his ancestors had been made knight by the Emperor SIGISMUND (1411-1437) at Rome. Young KEPLER was sent to school at the age of six years, but was soon removed, in order to become waiter in an inn. The father, who had been a soldier in the Belgian war, now engaged in the Austrian army sent against the Turks, and was not again heard from. The mother, whose youth had been spent with an aunt who had been burned as a witch, was extravagant and unkind, and KEPLER's youth was most unhappy. His two brothers were good-for-naughts, and his only consolation was the tender friendship of his sister Marguerite, who was married to a Protestant pastor, and in him, also, KEPLER had an enemy. At eighteen years of age, the boy was sent to the seminary at Tuebingen, where he did not greatly distinguish himself. The influence of the celebrated MAESTLIN turned KEPLER's thoughts from theology to mathematics.

"As soon as I could appreciate the charms of philosophy," says KEPLER, "I followed it with ardor, in all its parts. I gave no particular attention to astronomy, though I readily comprehended what was taught. I had been educated at the expense of the Duke of Wurtemberg, and when I saw my schoolmates accept positions in his service for which they had shown no especial aptitudes, I decided to take the first place which might be offered to me." This position was that of professor of astronomy.

At the age of twenty-two years (1593), KEPLER was appointed professor at Graz. In 1600 the religious persecutions in Styria broke out; and KEPLER, with his fellow professors, who were Protestants, was expelled. In 1597 he had married a noble and very beautiful widow, with whom his life was not happy.

In the same year (1600) TYCHO BRAHE called KEPLER to Prague as his assistant. KEPLER'S first letters from Prague contain this paragraph: "All is uncertain here. TYCHO is a man with whom one cannot live without being exposed to cruel insults. The salary is splendid, but the treasury is empty, and no one is paid." At TYCHO'S death (1601), KEPLER was appointed court-astronomer at a salary of fifteen hundred florins, which, likewise, was not paid. "I waste my time," says KEPLER, "at the door of the treasurers and in begging." One thing consoled him for all these troubles. This was the free access to the manuscript astronomical observations of TYCHO, and the opportunity to seek in them the secrets of the planetary motions. Not the least of his annoyances was the necessity to cast horoscopes for the court officials. After the death of the Emperor RODOLPH his successor appointed KEPLER to reform the calendar, which was rejected as "Papist" by Protestants. Although an official of the court, KEPLER was obliged to earn his bread by calculating little almanacs containing weather and other prognostics. The arrears of his salary amounted, at this time, to twelve thousand crowns. He now accepted the chair of mathematics at Linz, and (his wife having died) he married the beautiful SUSANNE RETTINGER, by whom he had seven children. His happiness was of short duration. He was accused of heresy by the Catholics and by the Protestants of Linz at once.

In 1615 KEPLER'S sister writes to beg his aid in the lawsuit instituted against his mother as a sorceress. This suit continued for five years. His mother, then seventy-five years old, was accused of having been instructed in magic by an aunt who had in fact been burned for sorcery; of having bewitched various persons; of having conversation with the Devil; of being unable to weep; of causing the death of the pigs of the neighborhood; and finally, of never looking one in the face—a habit of witches, it was averred. KEPLER was able to modify the sentence of his mother, not to annul it. She was released, and died in 1622. On his return to Linz his enemies so reviled him as the son of a sorceress, that it was necessary for him to leave Austria.

He became astronomer to WALLENSTEIN, but was replaced by the Italian astrologer, ZENO, after having vainly begged for the arrears of his salary. He died at the age of fifty-nine years, November 15, 1630. He left behind him twenty-two crowns, a coat, two shirts, twenty-seven copies of his *Ephemerides*, and sixteen copies of his *Rudolphine Tables*. At the time of his death, the princes whom he had served were in his debt twenty-nine thousand florins.

These melancholy details give KEPLER'S biography a place in the martyrology of Science.* The world in general recollects only the brilliant series of achievements which it owes to him; and does not remember the misery and trouble which continuously surrounded his life. These tribulations were desperately real to him, and it is an injustice to a heroic soul to forget that the discoveries which have changed the face of the world's thought, were wrung from cruel and sordid circumstance.

II. PORTRAIT OF KEPLER.

The portrait of KEPLER accompanying this article is copied from a photograph kindly given to me many years ago by Dr. J. L. E. DREYER, Director of the Observatory of Armagh. It is a copy of an original painting now, I believe, in the possession of KEPLER'S descendants, and, so far as is known, has never before been published.

III. JUDICIAL ASTROLOGY.

A short account of judicial astrology will not be unwelcome here.

The twelve "*houses*" of astrology were thus defined: Imagine a sphere surrounding the Earth and concentric with it, on which meridians (called *circles of position*) are drawn from its north to its south pole† thirty degrees apart, dividing the surface into twelve equal parts. Each of these areas is a "*house*," according to the terms of judicial astrology.

The *house* just about to rise at the moment for which the horoscope was cast is I — the first house. The lower meridian of the

* The foregoing sketch is chiefly taken from ARAGO, *Oeuvres*, tome iii, p. 198.

† Sometimes the great circles were drawn through the north and south poles of the ecliptic, more often through the north and south points of the horizon. At least three different systems were thus available to the astrologer, who could choose the one which served his purpose (and his client) best.

place separates the third and fourth *houses*; VI has just set; the upper meridian of the place separates IX and X; XII has just risen.

Each star and planet is situated in some one of the *houses*. The stars revolve in circles parallel to the equator, as do the planets; but the latter have motions along the ecliptic, within the Zodiac. The auguries depended chiefly on the positions of the planets in the Zodiac, and in respect to the various *houses*. The most important house was the first — the *ascendant*, — *i. e.*, that one just about to rise. The point of the ecliptic just rising was the *horoscope* — a term which has gradually been transferred to the augury itself. The X *house* — that just east of the meridian and approaching it — was next in power, etc. Moreover, each *house* had a special meaning:

I	is the house of	<i>Life</i> ;	VII	is the house of	<i>Marriage</i> ;		
II	“	“	<i>Riches</i> ;	VIII	“	“	<i>Death</i> ;
III	“	“	<i>Brethren</i> ;	IX	“	“	<i>Religion</i> ;
IV	“	“	<i>Parents</i> ;	X	“	“	<i>Dignities</i> ;
V	“	“	<i>Children</i> ;	XI	“	“	<i>Friends</i> ;
VI	“	“	<i>Health</i> ;	XII	“	“	<i>Enemies</i> .

Each *house* (and also each sign of the Zodiac) has a planet for its Lord. The Sun has his throne in *Leo*; the Moon, in *Cancer*; *Mercury*, in *Virgo*; *Venus*, in *Taurus*; *Mars*, in *Scorpio*; *Jupiter*, in *Sagittarius*; *Saturn*, in *Aquarius*; etc.

When any planet is in its own *house* its influence is greater than in any other situation; if a planet is in a powerful *house* — in the ascendant, for example, — its influence is stronger than if it were in a weaker one — that near the lower meridian, for instance, — the III, and so on.

The planets were related to persons, countries, conditions, etc. somewhat as follows: The Sun referred to the persons of kings, emperors, and high dignitaries; the Moon, to those of lower degree, especially to such as plied their avocations by night; *Mercury* was the planet of philosophers, astrologers,* poets; *Venus* was related to love, marriage, women, as was but fitting; *Mars* was the soldier's planet; *Jupiter*, the planet of sages; *Saturn* ruled the fates of the aged, of monks, etc. Again, the Sun was beneficent; the Moon, melancholy; *Mercury*, inconstant; *Venus*, gracious; *Mars*, ardent; *Jupiter*, benign; *Saturn*, morose.

Not only were the planets efficient in human affairs by their

* N. B. the seal of the Astronomical Society of the Pacific.

very nature, as well as by their positions in the celestial *houses*, but also by their positions with respect to each other — their *aspects*. The *aspect* was the angle between two lines drawn from two planets to the earth's centre. *Mars* was in *opposition* to *Jupiter* when the two radii made an angle of 180° ; in *conjunction*, when the angle was 0° ; in *trine*, at 120° ; in *quadrature*, at 90° ; etc.

Quadrature and opposition were unfavorable portents; conjunction was neither favorable nor otherwise; trine and sextile were fortunate aspects.

It is not difficult to refute the pretensions of Astrology; and the wonder is that they endured so long. Two persons born at the same time (and at or near the same place*) should have the same fate. Paris in the time of CATHERINE DE MEDICIS or LOUIS the Eleventh was sufficiently populous to have suggested this obvious conclusion, which, just as obviously, was not in accord with experience. The king and the carpenter, born in the same hour, had very different lives; but the carpenter had no astrologer to cast *his* horoscope — and the king believed that the stars revolved for him alone.

The deathblow to astrology was given by the system of COPERNICUS, which changed the face of the world. When it was once clearly understood † that the Earth was a planet like *Mars* or *Mercury*, it took a new place in the solar system and in men's thoughts. *Jupiter* no longer moved in order to influence the destiny of the insignificant inhabitants of another planet. It had a mission of its own. Man was dethroned, and could no longer regard himself as the centre of the universe.

IV. ON A MANUSCRIPT OF KEPLER'S.

A short while ago a manuscript of KEPLER'S was offered for sale in Germany, and it was at once secured for the collection of the LICK Observatory. ‡ It is from the collection of KEPLER MSS. of the Observatory of Pulkowa, and bears the certificate of W. STRUVE. §

It is written on both sides of a rough, strong piece of paper,

* For the latitude influenced the *horoscope*.

† Not until after the discoveries of GALILEO with the telescope had proved the conclusions of COPERNICUS to be true.

‡ MSS., letters, etc., of BESSEL, GAUSS, HANSEN, C. A. F. PETERS, SCHUMACHER, W. STRUVE, and others have been obtained for the Observatory.

§ "Die Überschrift von fremder Hand, das uebrige von KEPLER'S Hand. Aus der Sammlung der KEPLER'schen Manuscripte in Pulkowa. W. STRUVE.

"Pulkowa, den 25/13 Mai 1854."

about six by eight inches. The ink is somewhat yellow and faded, but is entirely legible. The MS. is a horoscope, cast by KEPLER, of one HANS HANNIBAL HÜTTER, who was born 1586, September 10th. It bears the marks of extreme haste. At first sight, one might think that some other piece of manuscript would be more desirable for the collection of an astronomical observatory. What value could be assigned, for instance, to the scrap of paper on which the master verified his guess as to the third law of motion? But nothing is more suitable to recall the personality of KEPLER than this piece of astrology, by means of which he kept the wolf from the door, and purchased the strength and leisure for higher things.

It is strange to reflect that, at last, this portrait and this manuscript of KEPLER'S should be printed for the first time in these *Publications*, on the very borders of BALBOA'S Sea!

The chief parts of the manuscript are as follows:

First—The title (which was not written by KEPLER):

*Anno 1586 den 10 Tag Septemb. . und
5 uhr nachmittags Ist Hannss Hannibal
Hütter Von Hutterss. . en,
Zur Welt geboren. h?*

Then follows, on the same side of the paper, a diagram by KEPLER, intended to give the XII astrological *houses*. It is not quite in the usual form, and has evidently been drawn in great haste. Next the diagram are eleven lines, in a column, giving the *aspects*, etc., of the planets and Moon.

On the reverse side of the sheet are five columns, similar to that just described: the first, of 14 lines; the second, of 16 (some of which should have been written in the third column, as is indicated by lines directed to their proper places); the third, of 8 lines (this column relates to the situation of the signs of the Zodiac, and is surrounded by a border); the fourth, of 15 lines; the fifth, of 16 lines.

As the only interest in the manuscript is derived from KEPLER'S connection with it (the fate of HANS HANNIBAL HÜTTER being now unimportant), I do not transcribe the separate symbols here. The essential point is that the LICK Observatory possesses a genuine manuscript in KEPLER'S hand which illustrates a part of his real life and belief.

There is no doubt that KEPLER seriously studied the art and

science of judicial astrology, nor that he (like his forerunner, TYCHO,) gave it a certain credence, always accompanied with some doubt.

“Wahrlich in aller meiner Wissenschaft der Astrologie weiss ich nit so viel Gewissheit, dass ich einzige Specialfach mit Sicherheit duerfte vorsagen.”*

LICK OBSERVATORY, October 19, 1896.

(TWENTY-FOURTH) AWARD OF THE DONOHUE
COMET-MEDAL.

The Comet-Medal of the Astronomical Society of the Pacific has been awarded to Mr. W. E. SPERRA, of Randolph, Ohio, for his discovery of an unexpected comet on August 31, 1896.

The Committee on the Comet-Medal,

EDWARD S. HOLDEN,
J. M. SCHAEBERLE,
W. W. CAMPBELL.

October 31, 1896.

(TWENTY-FIFTH) AWARD OF THE DONOHUE
COMET-MEDAL.

The Comet-Medal of the Astronomical Society of the Pacific has been awarded to Mr. GIACOBINI, of the Observatory of Nice, France, for his discovery of an unexpected comet on September 4, 1896.

The Committee on the Comet-Medal,

EDWARD S. HOLDEN,
J. M. SCHAEBERLE,
W. W. CAMPBELL.

November 4, 1896.

* WOLF: *Geschichte der Astronomie*, page 286.